



SAN DIEGO
HOUSING
COMMISSION

San Diego Housing Commission Natural Resources & Culture Committee Solar and Energy Efficiency Opportunities

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Solar and Energy Efficiency Opportunities

- SDHC is a strategic advocate of sustainability and clean energy
- SDHC recently adopted Sustainable Development Guidelines

“These guidelines establish a framework for the integration of sustainable design practices in the design, construction, acquisition and improvements that the Housing Commission owns and facilitates”.



SDHC Sustainable Development Guidelines

- **Resident Education**

- Information on proper use and maintenance of appliances
- Recommendations for improving comfort at low energy cost, such as natural ventilation, window shadings, fans, etc.
- Alternative transportation
 - Housing Commission's Transit-Oriented Design Guidelines

- **Efficient Landscaping**

- Drought tolerant plants
- Irrigation controllers
- Reduction of turf areas



SDHC Sustainable Development Guidelines

- **Site Selection Standards**
 - Upgrade common areas to sustainable standards
- **Construction Standards (meets or exceeds Title 24)**
 - Windows and doors
 - Roofing
- **Efficient Building Systems**
 - Electrical systems (energy usage)
 - Mechanical systems
 - Plumbing systems



Solar Technologies

- Solar technologies can contribute to sustainability at Affordable Apartment Communities.
- Solar Electric (Photovoltaic)
- Solar Thermal (Water Heating)



Solar Alternatives

- **Solar Electric:**

- *Pros:*

- Renewable resource
 - Functioning solar panels don't pollute
 - Solar Energy can be utilized to offset utility-supplied energy consumption.
 - Solar Energy supports local job and wealth creation, fueling local economies.
 - Most cost effective in new construction projects.

- *Cons:*

- Initial capital cost of solar panels very costly.
 - Less cost effective in refitting existing projects.
 - Uncertainty of solar rebates, tax incentives, and utility rates in the future.



Solar Alternatives

•Solar Thermal:

• *Pros:*

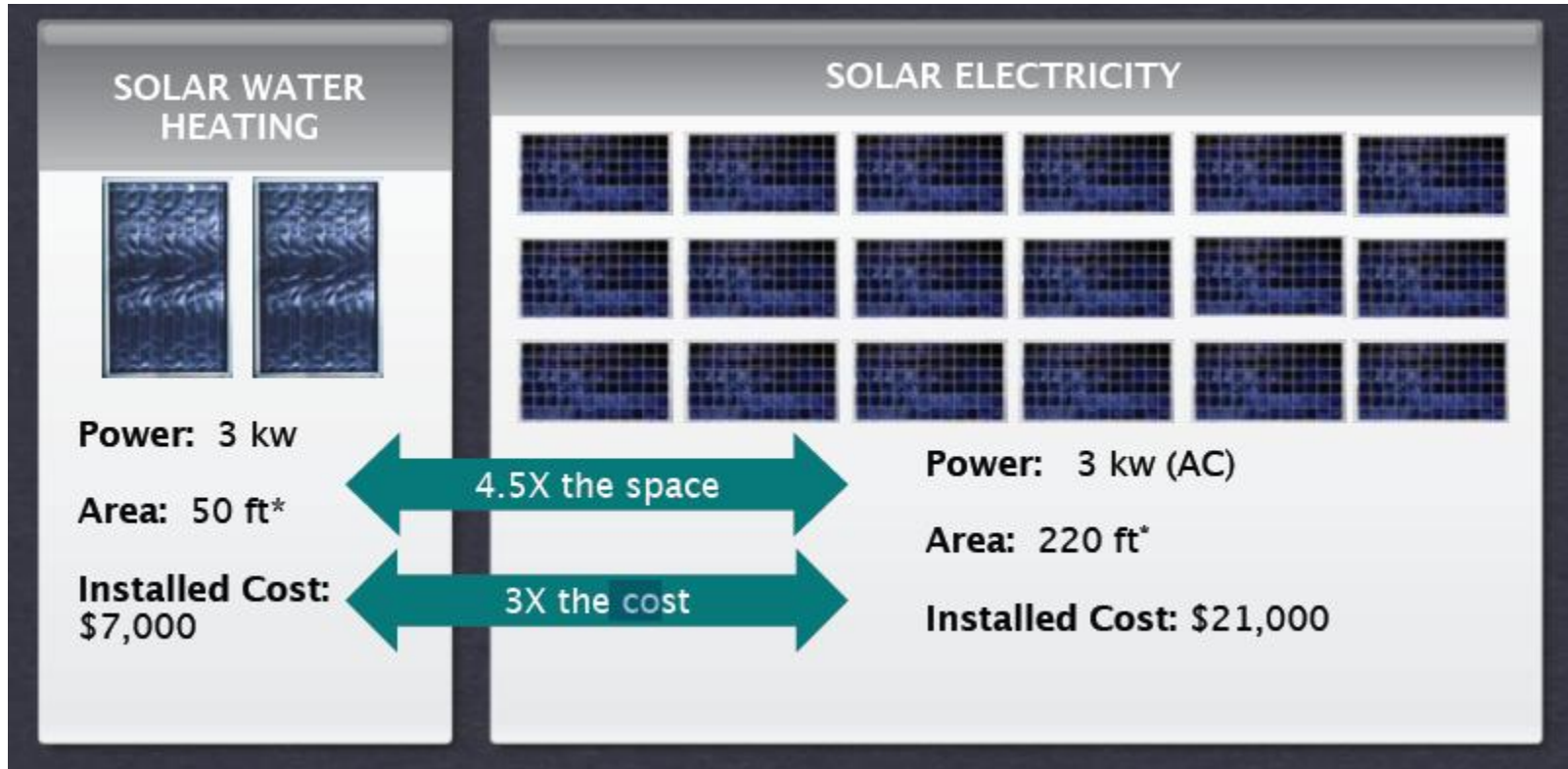
- Renewable resource
- Thermal devices require simpler technology compared to photovoltaic panels.
- The heat produced generates no carbon emissions.
- Solar thermal systems are easy to maintain once installed.

• *Cons:*

- Only water heating, no electricity generation.
- Water boiler must be compatible with a solar water heating system.



Renewal Energy Systems On-Site Power Plants



Source: Adroit Solar "Photovoltaics and Solar Thermal in Today's Market" – May 10, 2011



Solar Technologies Housing Commission Challenges

- Existing units may not have correct infrastructure to support solar technologies.
 - Inappropriate solar orientation
 - Insufficient roof space
 - Improper water tanks and boilers
 - Connectivity to SDG&E power grid
- Adherence to Procurement rules and processes.
- Funding sources not yet identified.



Solar Technologies Housing Commission Challenges

- As a non-profit SDHC cannot take advantage of solar tax credits.
- As owner of former HUD properties built in the mid 1900's, feasibility of solar refit is being considered in collaboration with SDG&E.
- As a lender, SDHC has encouraged developers to adopt Solar Technologies to maximum extent feasible.



Recent SDHC Funded Developments with Solar Technologies

- **New Construction Projects**

- **Dawson Senior** – Housing Development Partners / Chelsea
 - Solar Thermal
 - Solar Photovoltaic
- **Mercado** – Chelsea Investment Corporation
 - Solar Thermal
 - Solar Photovoltaic
- **Vista Grande** – Wakeland Housing & Development
 - Solar Water Heating for Community Building



Recent SDHC Funded Developments with Solar and Energy Efficient Technologies

- **New Construction Projects**

- **Kalos** - Community HousingWorks
 - Solar Photovoltaic

- **Riverwalk** – Affirmed Housing Developments
 - Solar Thermal
 - Solar Photovoltaic



Additional Sustainable Efforts in Recent Development Deals

- Dual pane energy efficient windows
- No VOC (volatile organic compounds) paint in units
- Dual flush toilets
- Water efficient fixtures – shower heads and faucets
- Energy star appliances – refrigerator and oven
- Compact fluorescent light bulbs
- Ceiling fans instead of AC



Additional Sustainable Efforts in Recent Development Deals (continued)

- Increased insulation in units
- Drip irrigation for certain landscaping
- Use of drought tolerant landscaping and/or no landscaping in selected areas.
- Low VOC flooring – No Carpeting
- Low VOC Cabinets and Tops
- Low flow Plumbing Fixtures (kitchens, baths)



Additional Sustainable Efforts in Recent Development Deals (continued)

- High efficiency window and patio doors
- White color roof
- Exterior wall and roof insulation
- Recycle trash chutes
- Dimmers used for some lights
- Irrigation system timer
- Bicycle Storage Racks





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